

In the Claims

Claims 1-19 canceled.

Claim 20 (new) A tandem axle system, comprising:

a first axle having a first service brake actuating chamber with a first diaphragm, said first diaphragm connected to a first brake actuating arm for engaging a first service friction device on said first axle;

a second axle having a second service brake actuating chamber with a second diaphragm, said second diaphragm having a smaller area than an area of said first diaphragm, said second diaphragm connected to a second brake actuating arm for engaging a second service friction device on said second axle, wherein said second axle, with said first axle, is part of a tandem axle system;

a first control valve in fluid communication with both said first and said second diaphragms to displace said first and said second brake actuating arms and engage said first and said second service friction devices on said first and said second axles respectively; and

a second control valve, separate from said first control valve, downstream from a reservoir and said first control valve, respectively, so that said first control valve is in direct fluid communication with said second control valve, wherein said second control valve provides less fluid pressure to said second brake actuation chamber than fluid pressure provided to said first brake actuating chamber by said first control valve.

Claim 21 (new) The apparatus of claim 20, wherein a displacement of said second brake actuating arm by said second diaphragm is less than a displacement of said first brake actuating arm by said first diaphragm.

Claim 22 (new) The apparatus of claim 20, wherein said first and said second brake actuating arms have a substantially equal length.

Claim 23 (new) The apparatus of claim 20, wherein said second brake actuating arm is shorter than said first brake actuating arm.

Claim 24 (new) A tandem axle system, comprising:

- a first axle having a first service brake actuating chamber having a first diaphragm, said first diaphragm connected to a first brake actuating arm for engaging a first service friction device on said first axle;

- a second axle having a second service brake actuating chamber having a second diaphragm, said second diaphragm connected to a second brake actuating arm, said second brake actuating arm being shorter than said first brake actuating arm, for engaging a second service friction device on said second axle;

- a first air control valve in communication with both said first and said second diaphragms for individually engaging said first and said second diaphragms to displace said first and said second brake actuating arms and

engage said first and said second service friction devices on said first and said second axles, respectively; and

a second control valve, separate from said first control valve, downstream from a reservoir and said first control valve, respectively, so that said first control valve is in direct fluid communication with said second control valve, wherein said second control valve provides less fluid pressure to said second brake actuation chamber than fluid pressure provided to said first brake actuating chamber by said first control valve.

Claim 25 (new) The apparatus of claim 24, wherein said second diaphragm has a smaller area than an area of said first diaphragm.

Claim 26 (new) The apparatus of claim 24, wherein a displacement of said second brake actuating arm by said second diaphragm is less than a displacement of said first brake actuating arm by said first diaphragm.

Claim 27 (new) A method of braking a tandem axle system, comprising:

engaging a first service friction device on a first axle with a first brake actuating arm connected to a first diaphragm;

engaging a second service friction device on a second axle with a second brake actuating arm connected to a second diaphragm, said second axle part of a tandem axle system with said first axle;

providing a pre-determined amount of pressurized fluid to said first diaphragm and said second diaphragm to engage said first service friction device and said second service friction device; and

providing a first control valve between a reservoir and said first service friction device and providing a second control valve, separate from said first control valve, between said first control valve and said second service friction device for providing less fluid pressure to said second service friction device than fluid pressure provided to said first service friction device by said first control valve.

Claim 28 (new) The method of claim 27, wherein said second brake actuating arm is shorter than said first brake actuating arm.

Claim 29 (new) The method of claim 27, wherein said second brake actuating arm provides a braking force to said second friction device less than a braking force said first brake actuating arm provides to said first friction device.

Claim 30 (new) The method of claim 27, wherein said second diaphragm has a smaller area than an area of said first diaphragm.

Claim 31 (new) The method of claim 30, wherein said second diaphragm displaces said second brake actuating arm a shorter distance than said first diaphragm displaces said first brake actuating arm.